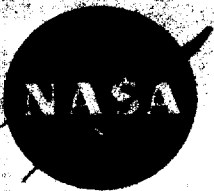
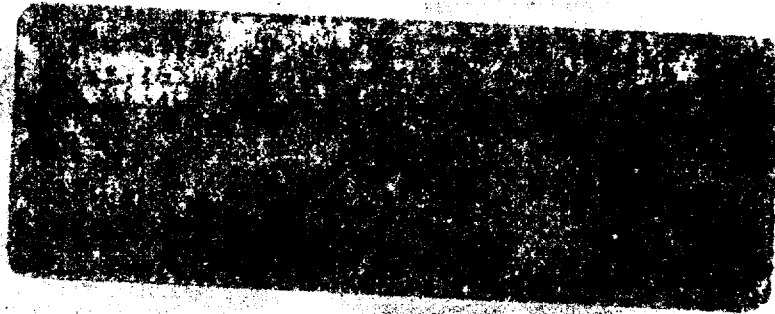


**NASA SAFETY OFFICE
WASHINGTON, D.C.**

**1969 REPORT OF
ACCIDENT/INJURY STATISTICS
AND MISHAP RECAPITULATION**



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, D.C. 20546

AUG 21 1969

OFFICE OF THE ADMINISTRATOR

TO: All NASA Supervisors
FROM: Administrator
SUBJECT: Safety Performance - 1968

I feel it most opportune at this time to state my strong continued interest in and support of NASA's safety program and to request your continued efforts to keep "safety" in every aspect of NASA's activities.

While we have had some accidental losses, due mostly to the fact that our work is of a research nature, it is the dedication and desire on the part of all of us to work and act safely that helped immeasurably to accomplish the Apollo 11 mission of landing men on the moon and returning them safely to the earth.

The term "safety" has been of prime importance in our endeavor and must continue to be so as we pursue the exploration of space. The safety of our space explorers must not be compromised, as we all recognize. We cannot be less diligent with regard to our earth-bound work force, the people who make the space flights possible.

Partial evidence of our ability to work safely is manifested in NASA's receipt of the National Safety Council's "Award of Merit for 1968."

For these reasons, I extend my congratulations to each of you for past safety efforts and ask again that you continue, without any lessening of effort, to promote safety at all times within your operational area and among your employees, for your mutual benefit and for the good of the Agency and the Nation.

A handwritten signature in cursive script, reading "T. O. Paine", is written over the typed name.

T. O. Paine

NATIONAL SAFETY COUNCIL

AWARD
OF
MERIT



NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION

for
A NOTEWORTHY
SAFETY PERFORMANCE
1968

Howard Lyle

President
National Safety Council

H. S. McFarland

Vice President
for Industry

FOREWORD

This annual NASA Safety Report to the various NASA Field Installations (Directors, Safety Officials, and Supervisors) is intended to furnish indices of past safety performance. By utilizing the information contained in the report in a subjective manner, it is hoped that better safety performance may be accomplished by each activity of NASA to further the aims and policies of the safety program during the succeeding report time period.

The report encompasses the Agency's accident and injury experience for calendar year 1968 in statistical and recapitulation form. It also includes NASA Safety Office conclusions based on the material contained in the report.

The statistics presented are compilations of the accident/injury experiences reported by the various NASA installations on monthly and quarterly bases. The injury rates and the severity rates are based on the United States of America Standards Institute Standard Z 16.1 (Standard Method of Recording and Measuring Work Injury Experience). The injury rate figures presented apply only to NASA Civil Service Personnel.

Property damage statistics, i.e. automobile and aircraft accident frequency rates, are based on accidents per million miles driven or per thousand hours flown, respectively. The figures for automobile frequency apply only to NASA owned vehicles since Government Services Administration vehicle accidents are charged against the GSA accident experience.

The "Recapitulation of Mishaps" portion of the report deals with the major mishaps experienced by NASA organizations during the report year and meet the definitions described on page 16 for types A or B accidents or for significant incidents.

Contractor employee injury or property damage notations are included in the Recap section because of the significance attached to such mishaps and the serious consequences resulting from the occurrences.

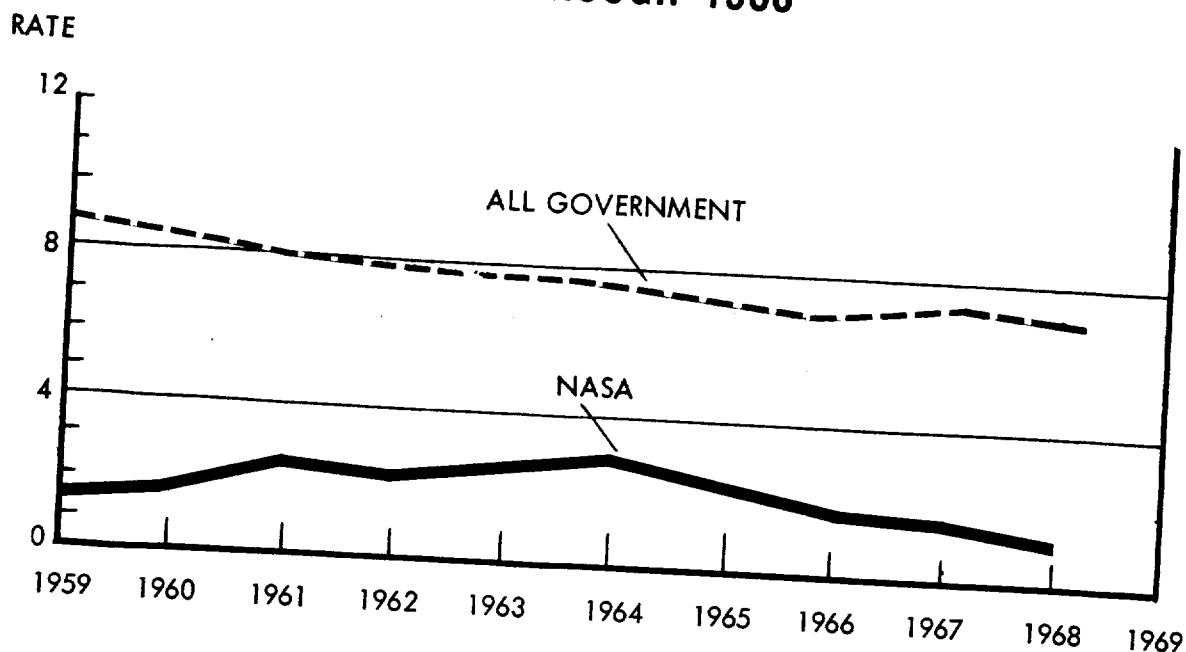
Each chart, graph, and the narrative portion of the report is considered to be self explanatory. Should there be any questions on any part of the report, however, they may be directed to;

NASA Safety Office
Code DY
Washington D. C. 20546

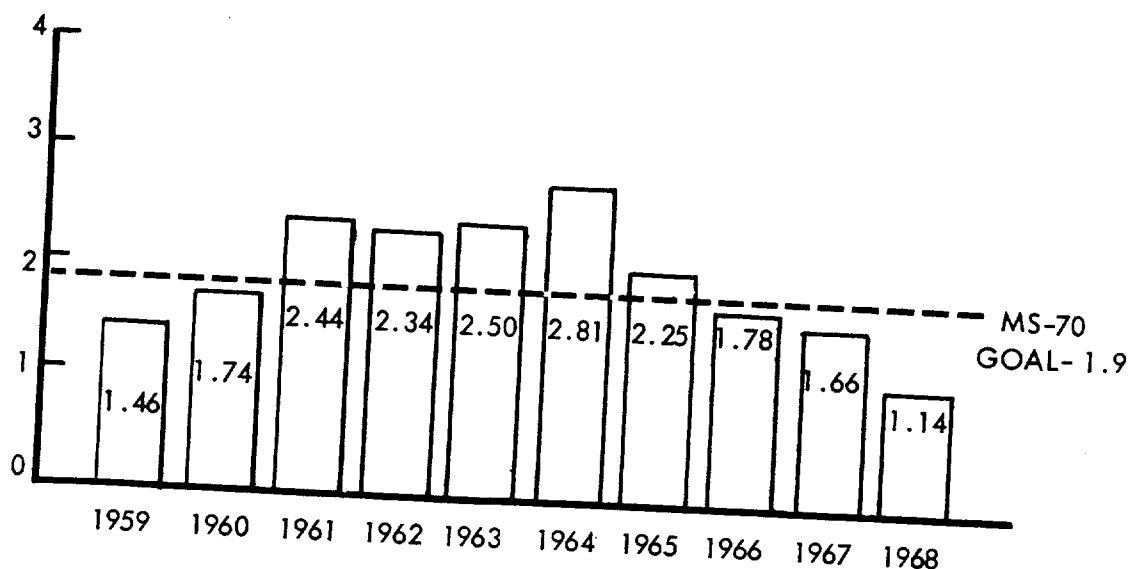


D. F. Hayes
Acting NASA Director of Safety

COMPARISON OF NASA INJURY FREQUENCY RATES 1959 THROUGH 1968



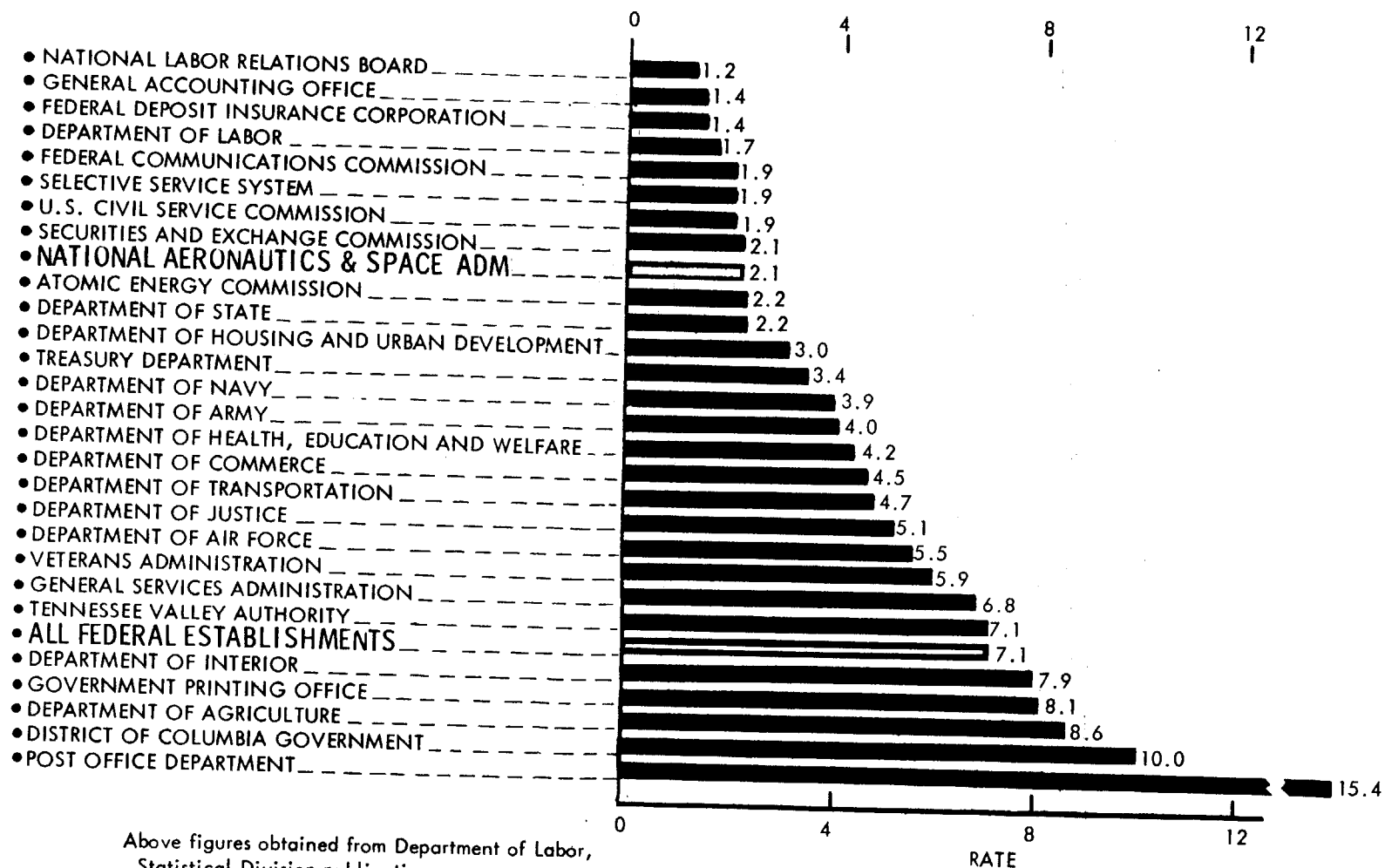
NASA INJURY FREQUENCY RATE 1959-1968



Frequency Rate is the number of disabling injuries per 1,000,000 man-hours worked

DISABLING INJURY-FREQUENCY RATES IN FEDERAL AGENCIES

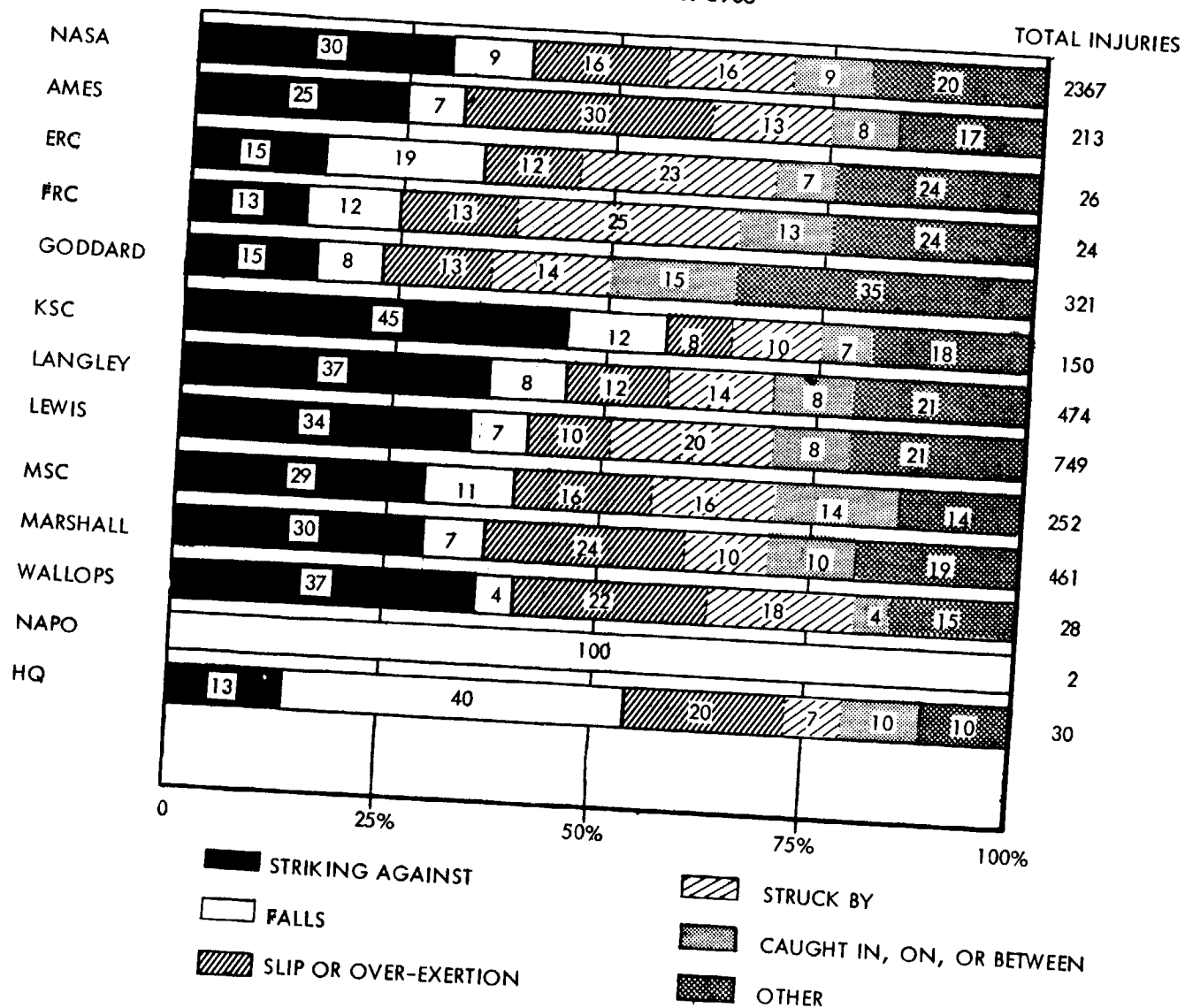
LATEST AVAILABLE FIGURES 1967 RATE



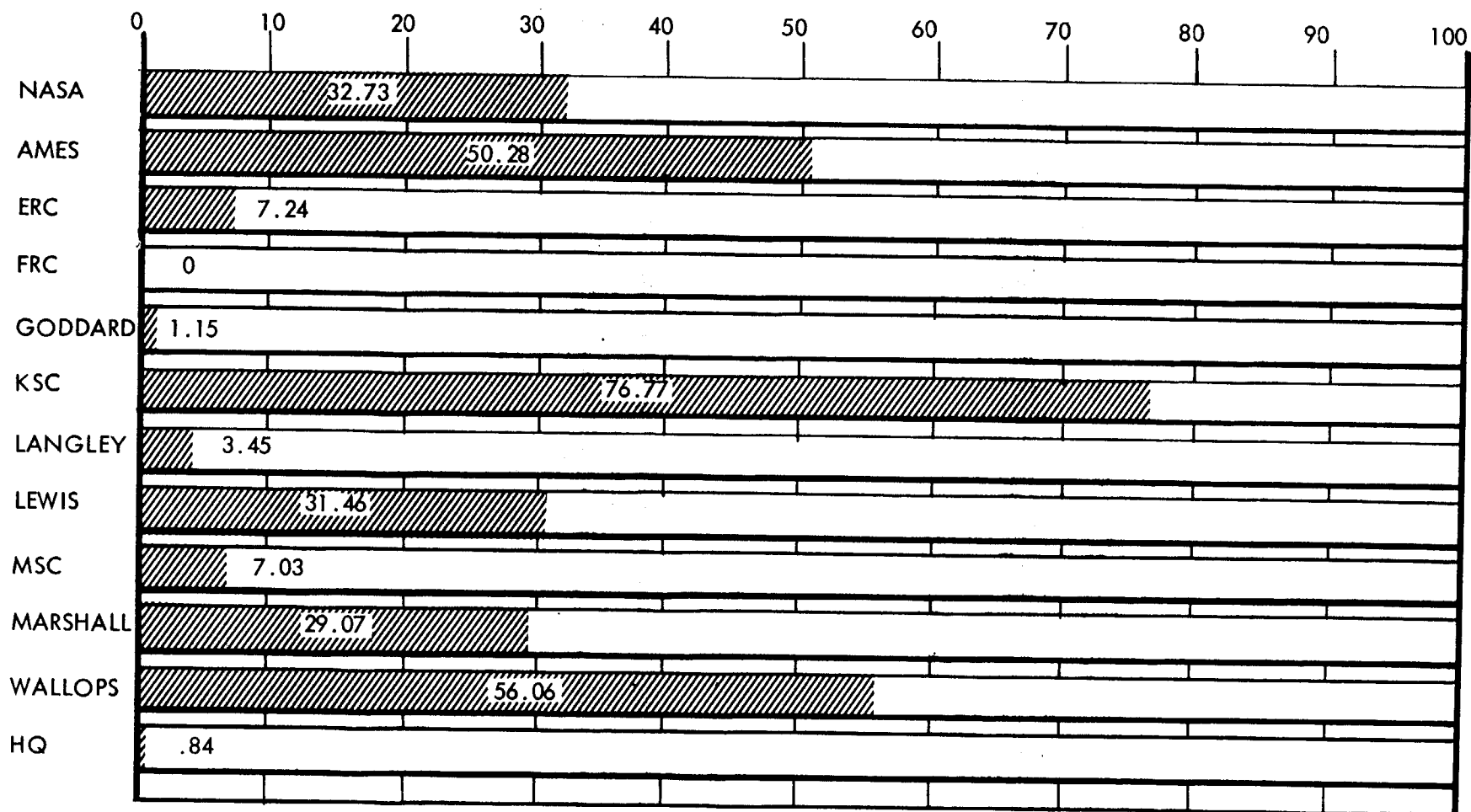
Above figures obtained from Department of Labor,
Statistical Division publications.
Frequency Rate is the number of disabling
injuries per 1,000,000 man-hours worked

NASA INJURY CATEGORIES BY CENTERS

JANUARY- DECEMBER 1968



NASA INJURY SEVERITY RATES BY CENTERS, JANUARY - DECEMBER 1968

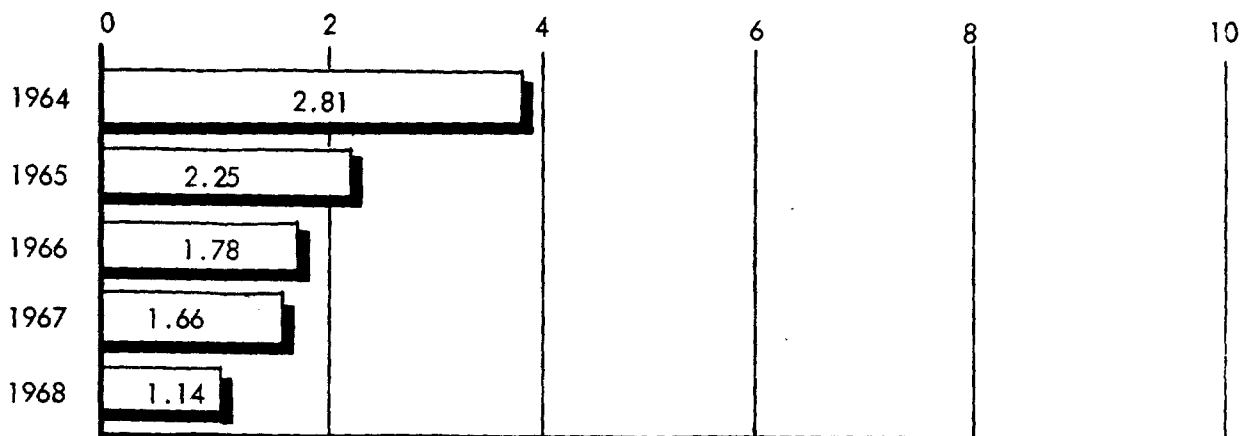


SEVERITY RATE IS COMPUTED AS THE NUMBER OF MAN DAYS LOST MULTIPLIED
BY 1,000,000, DIVIDED BY TOTAL MAN HOURS WORKED.

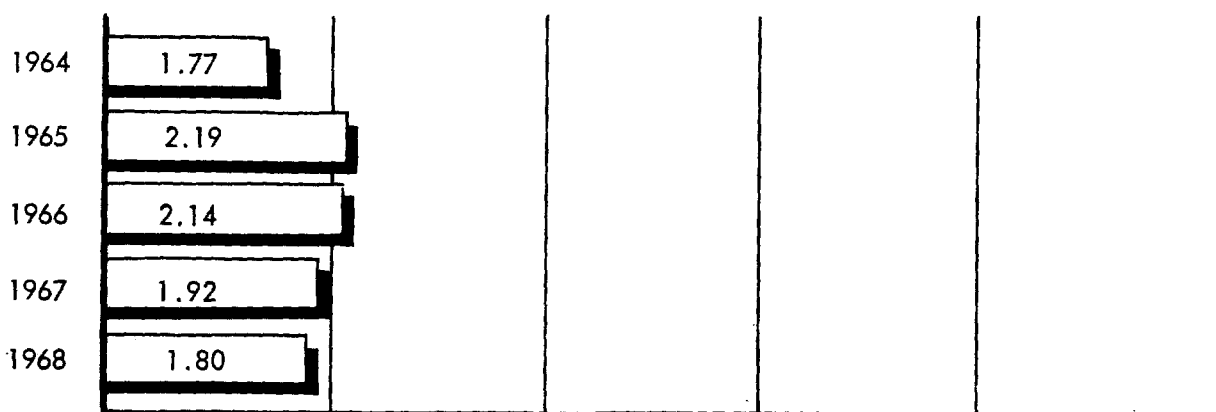
NASA INJURY FREQUENCY RATE*

LISTED ALPHABETICALLY, BY CENTERS

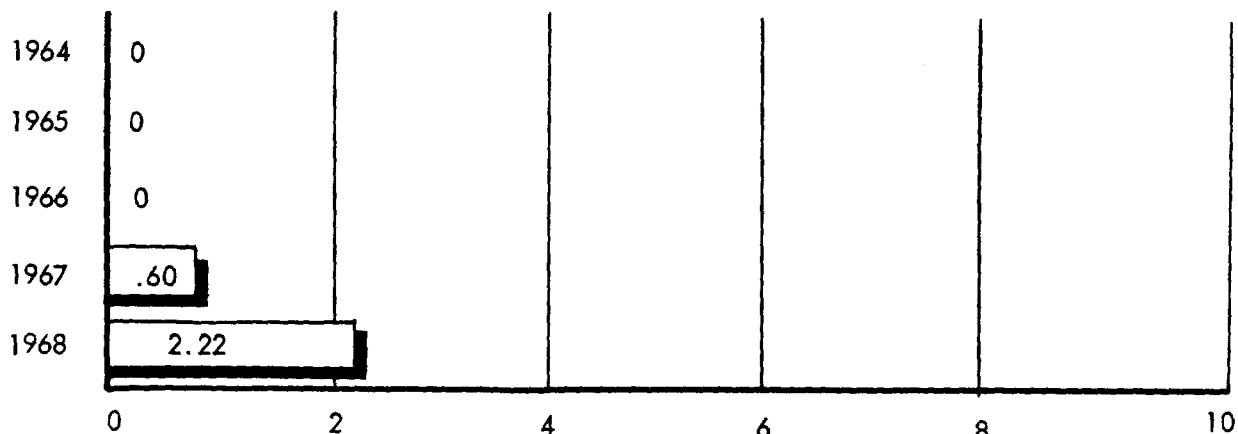
AGENCY, NASA TOTAL



ARC



ERC



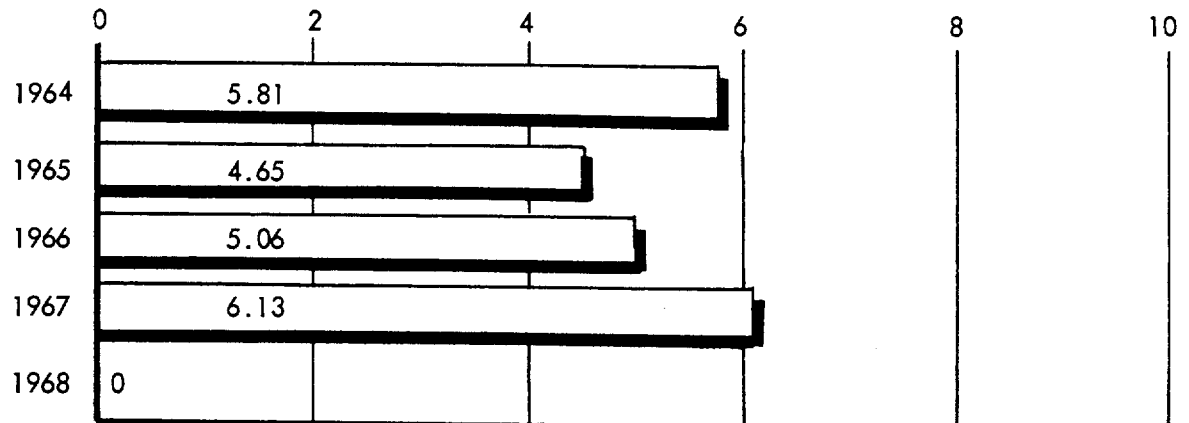
FREQUENCY RATE

* Frequency rate is the number of disabling injuries per 1 million man-hours worked

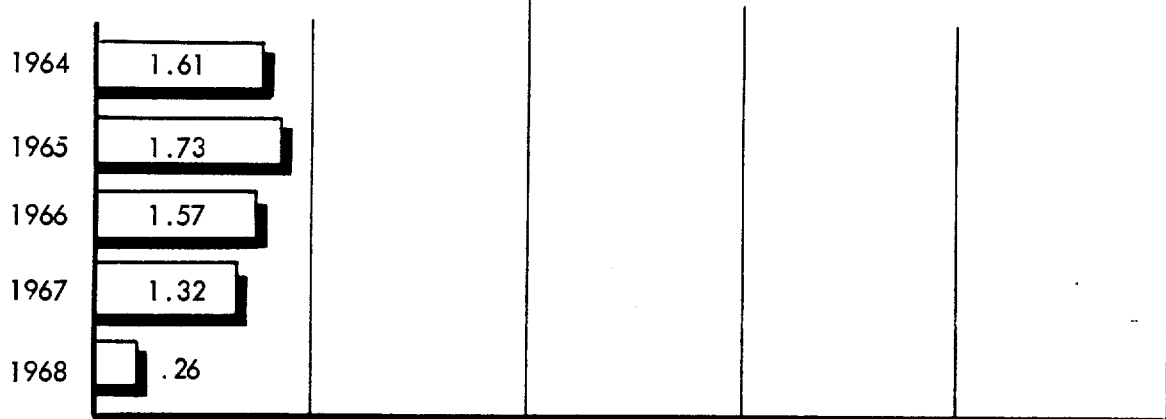
NASA INJURY FREQUENCY RATE*

LISTED ALPHABETICALLY, BY CENTERS

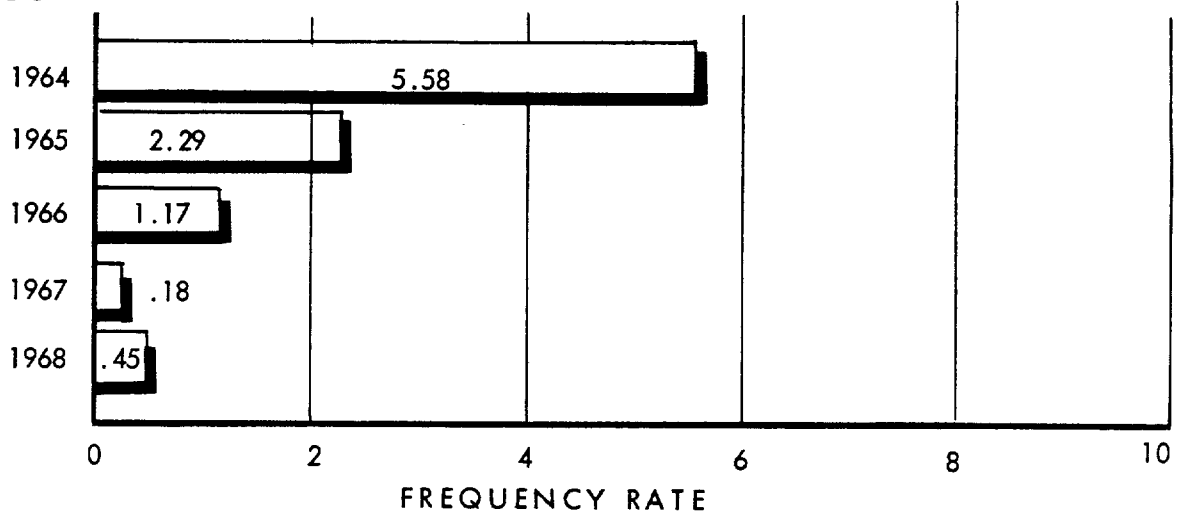
FRC



GSFC



KSC

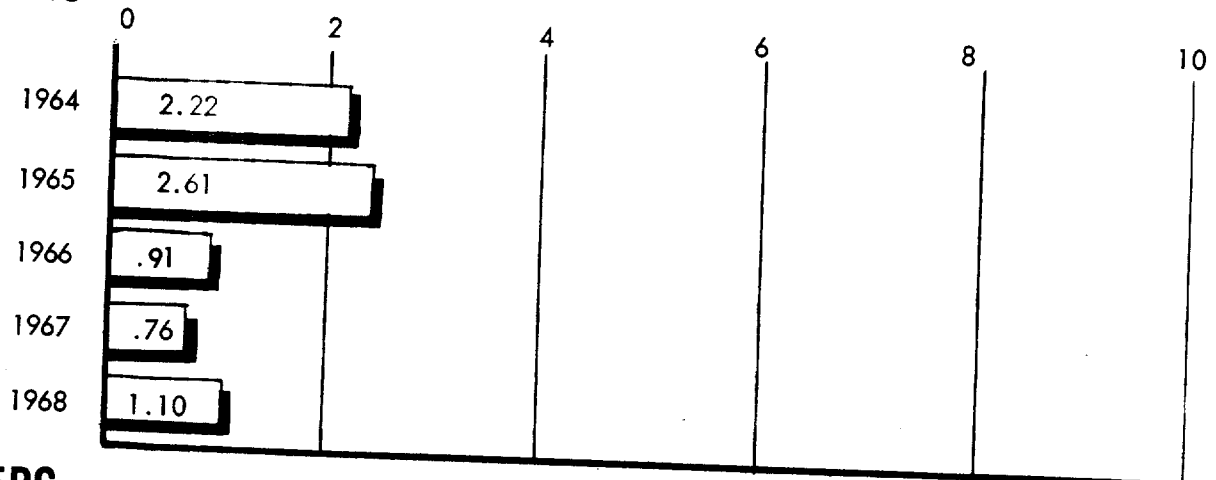


* Frequency rate is the number of disabling injuries per 1 million man-hours worked

NASA INJURY FREQUENCY RATE*

LISTED ALPHABETICALLY, BY CENTERS

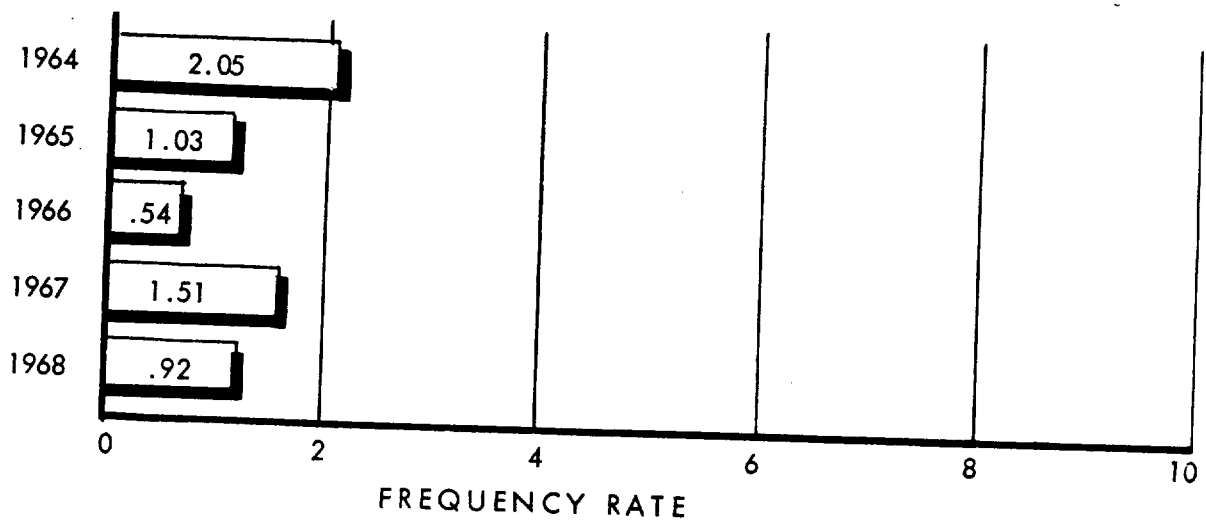
LARC



LERC



MSC



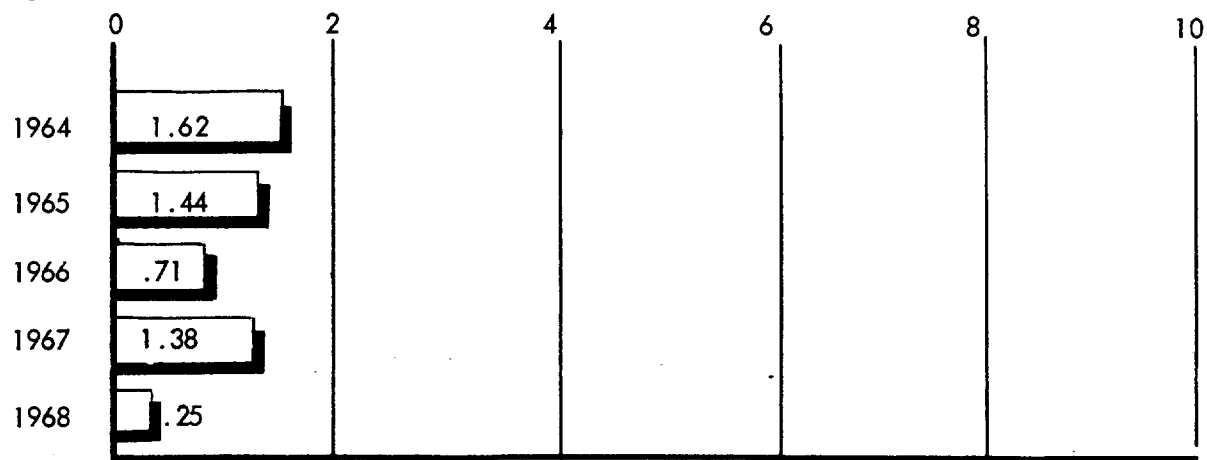
* Frequency rate is the number of disabling injuries per 1 million man-hours worked

Note:
Insufficient data for comparison years for NAPO

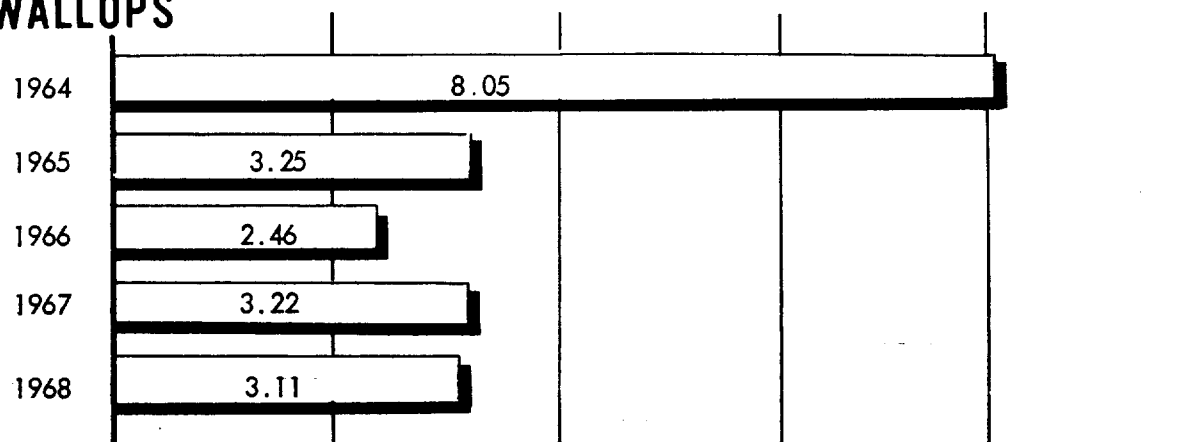
NASA INJURY FREQUENCY RATE*

LISTED ALPHABETICALLY, BY CENTERS

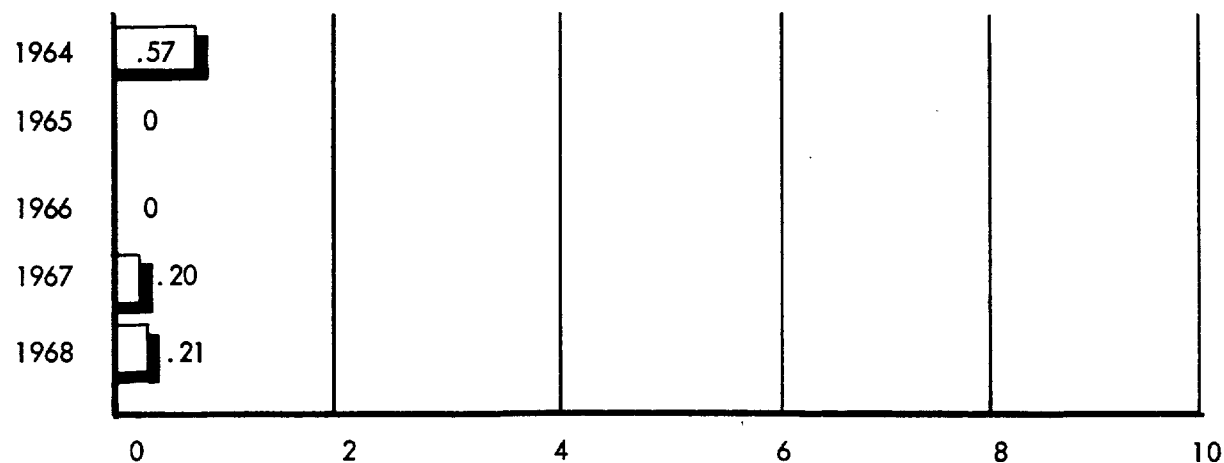
MSFC



Wallops



HQS

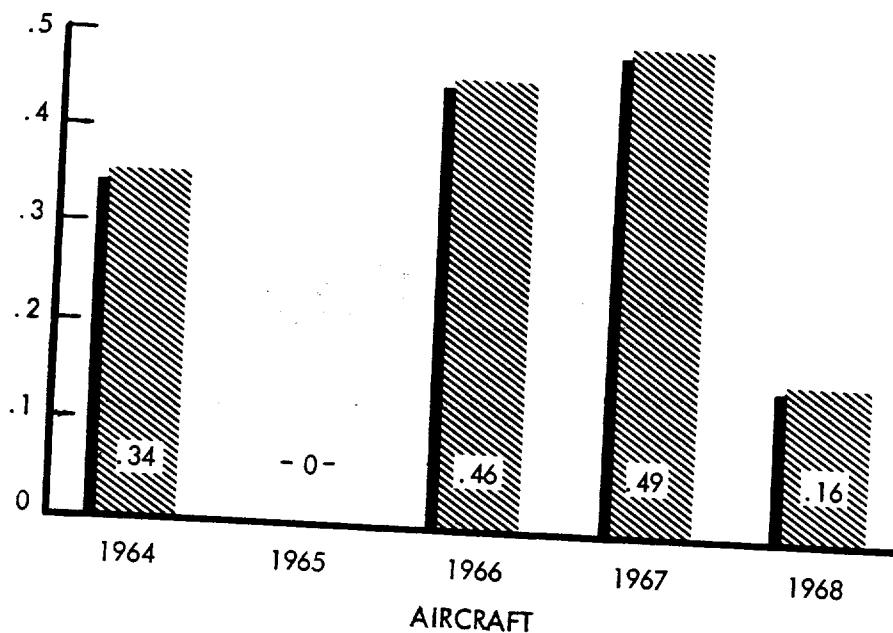


FREQUENCY RATE

* Frequency rate is the number of disabling injuries per 1 million man-hours worked

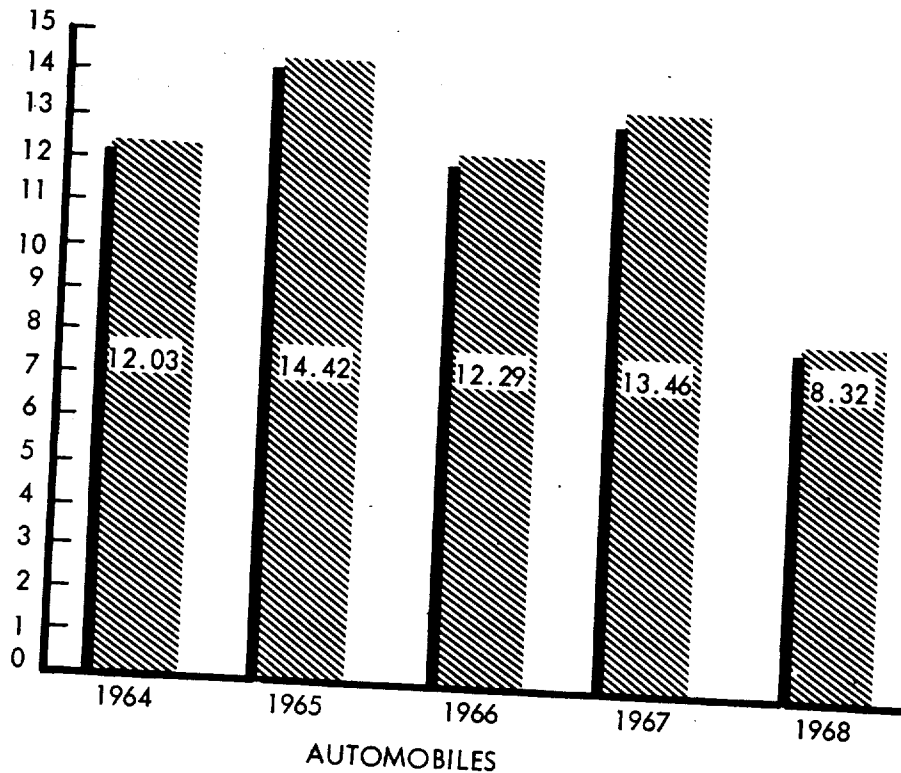
NASA AIRCRAFT AND AUTOMOBILE ACCIDENT FREQUENCY RATES

FREQUENCY RATE



Frequency Rate is the Number of
Accidents per 1,000 hours Flown

FREQUENCY RATE

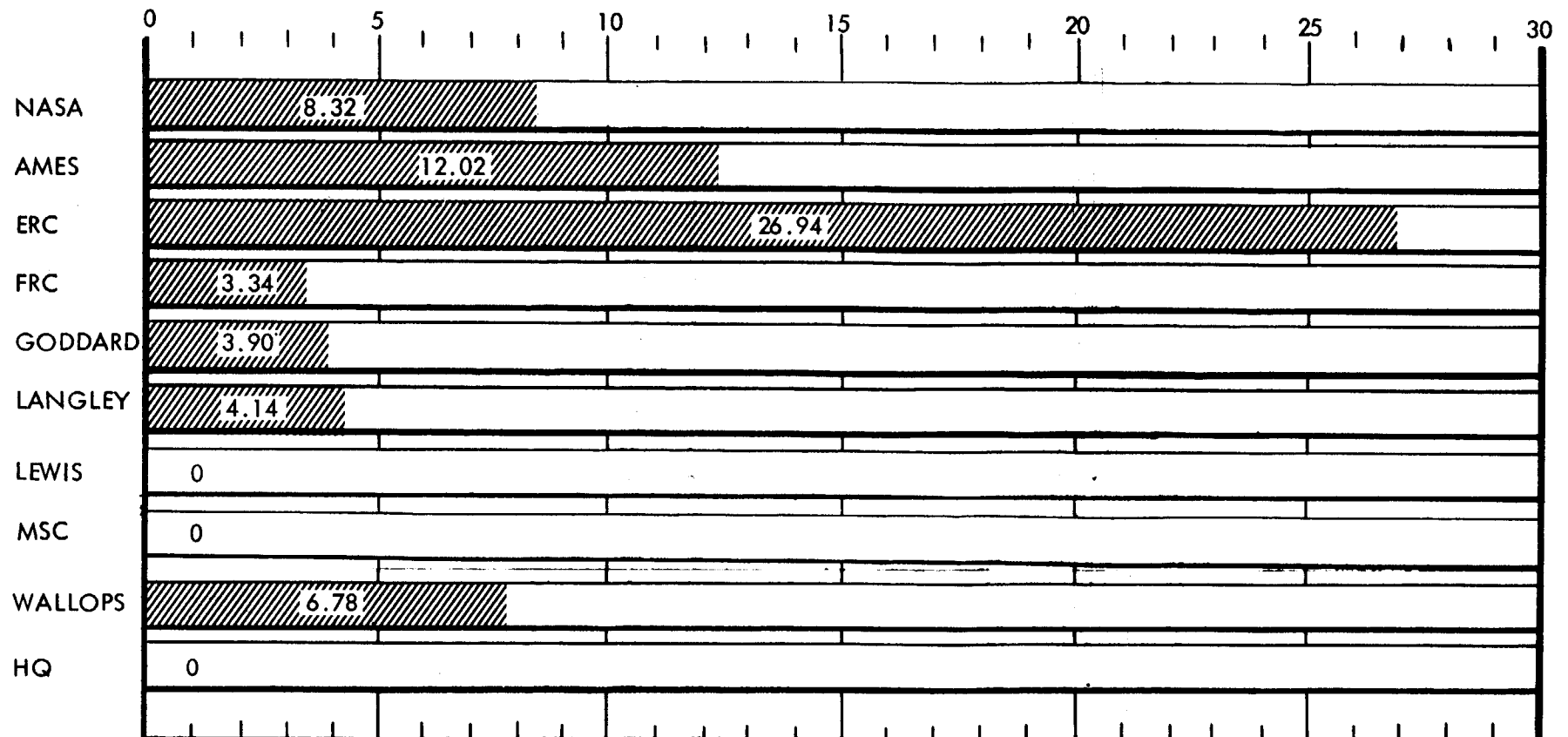


Frequency Rate is the Number of
Accidents per 1,000,000 Miles Driven

NASA AUTOMOBILE ACCIDENT FREQUENCY RATES

BY CENTERS

JANUARY - DECEMBER 1968



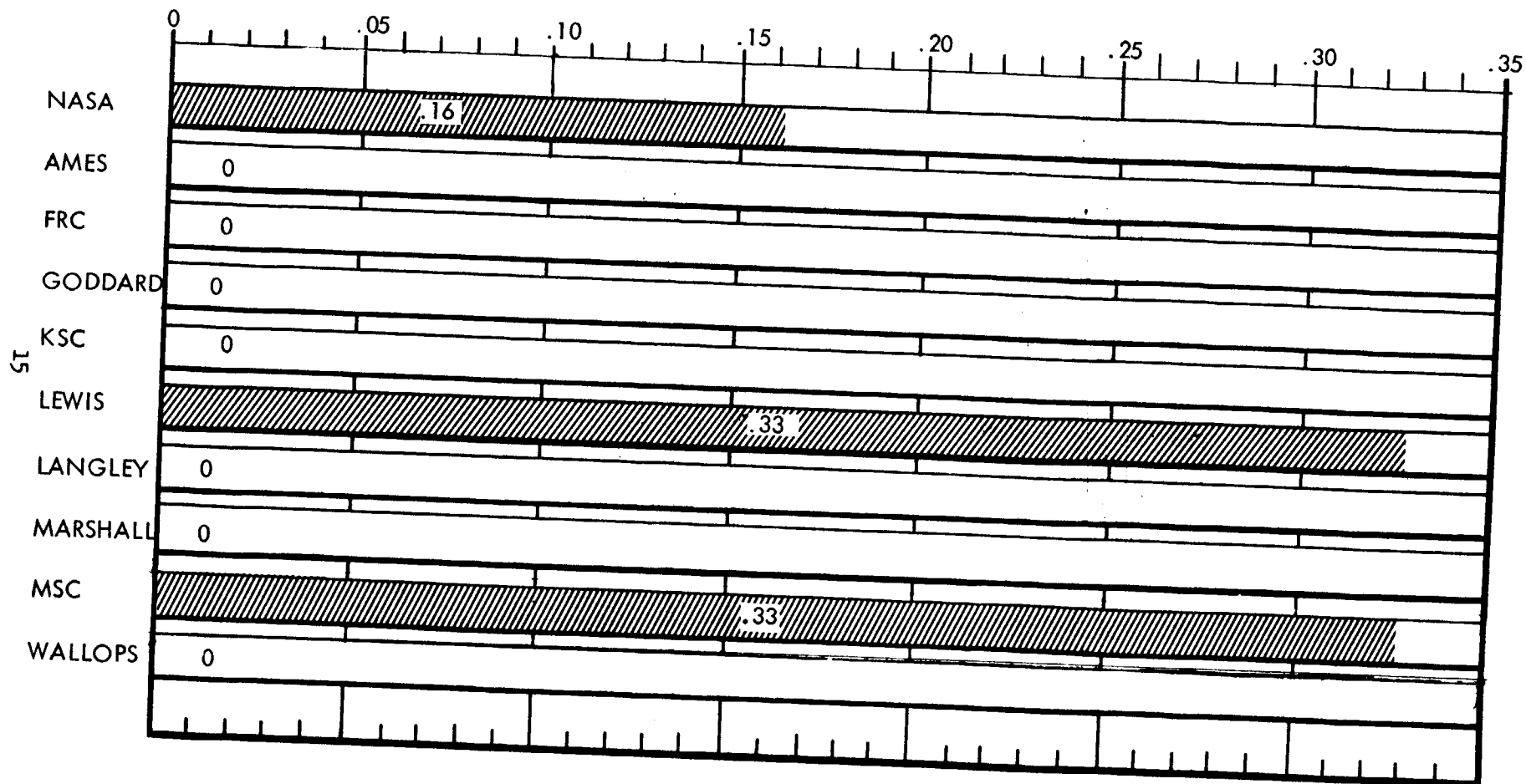
FREQUENCY RATE IS THE NUMBER
OF ACCIDENTS PER 1,000,000 MILES DRIVEN

KSC, MSFC, NAPO NOT INCLUDED SINCE
GSA CARRIES THOSE RATES

NASA AIRCRAFT ACCIDENT FREQUENCY RATES

BY CENTERS

JANUARY - DECEMBER 1968



FREQUENCY RATE IS THE NUMBER
OF ACCIDENTS PER 1,000 HOURS FLOWN.

ERC, NAPO, HQ. NOT INCLUDED SINCE
GSA CARRIES THOSE RATES

MISHAP RECAPITULATION
TYPES OF MISHAPS
(definitions)

MISHAP	Any event classed as a NASA Accident, Incident, or Mission Failure.
TYPE A (Accident)	Any fatality, five or more persons seriously injured, \$100,000 (or more) damage to NASA/NASA contractor personnel or property.
TYPE B (Accident)	Serious injury to four (or fewer) persons; property damage over \$10,000, but less than \$100,000 to NASA/NASA contractor personnel or property.
INCIDENT	A mishap (less than accident severity) to persons or property, over \$250 but less than \$10,000, or a non-serious injury.
MISSION FAILURE	Any event which jeopardizes a mission, prevents major mission objective, or premature mission termination.

MISHAP RECAPITULATION
MAJOR MISHAP EXPERIENCE - 1968
TYPE A ACCIDENTS

Fatality	ERC	Construction contractor employee was struck by falling load from crane operation. 10/8/68
Fatality	KSC LC 39A	Contractor employee was struck in chest by pipe cap while attempting to remove same while pipe was under pressure. 5/16/68
Fatality	KSC	Contractor employee was driving station wagon when he veered across road and struck a truck. 12/26/68
Fatality	Wallops	Electrical contractor employee was electrocuted on "pole top" when some temporary lines were energized. 6/10/68
Crash LLRV #1	MSC	Insufficient fuel and loss of attitude resulted in loss of control and crash of the vehicle - pilot bailed out, unharmed. 5/6/68
Crash LLTV #1	MSC	Loss of vehicle control, pilot bailed out. 12/8/68
T-38A Aircraft	MSC	Rudder controls had been reinstalled wrongly - pilot aborted take-off - aircraft crashed into ditch. 9/27/68
Fire, Electronics Trailer	MSFC	Fire occurred from undetermined causes between 5:15 PM and 4:15 AM when it was discovered by guard patrol. 12/14/68
S-11, Mini-B Test Article	MSFC	Article was undergoing test when it exploded and burned during LH ₂ chill-down operation. 12/20/68

MAJOR MISHAP EXPERIENCE - CY 1968
SIGNIFICANT INCIDENTS

Antenna Damage
DSS 62-Madrid

JPL

Truck mounted work tower was positioned near edge of antenna dish and left unmanned - antenna was rotated and struck tower. 8/29/68

LLTV #1 Fuel
Tank Rupture

MSC

Fuel tank was being pressurized from external source when overpressurization occurred and burst the tank. 8/27/68

J2-SE Engine
Damage

MSFC

Engine was in storage when it was struck by falling crane parts when crane was damaged during testing. 5/29/68

MAJOR MISHAP EXPERIENCE - CY 1968
MAJOR MISSION FAILURES

Nimbus B Launch Vehicle	KSC WTR	Yaw rate gyro malfunction (improper Installation) caused erratic flight - range safety destruct of Thorad-Agena Vehicle was necessitated. 5/18/68
Intelsat III-A Delta 59	KSC ETR Pad 17-A	Pitch rate gyro (electrical) malfunction caused erratic flight - range safety destruction was required - vehicle was breaking apart in air. 9/18/68
ATS IV (D) Atlas-Centaur	KSC ETR Pad 36-A	Failure of peroxide propellant to reach engine boost pump on the Centaur stage caused stage and payload to be stranded in orbit. 8/10/68

CONCLUSIONS ON THE REPORT

It is evident, from a review of the charts and graphs preceeding, that the NASA employee injury rates rank very well in comparison to other government agencies. This type of comparison can have a tendency to establish a false sence of security, however, and must be avoided.

It is disquieting to observe that many serious mishaps continue to occur in the form of contractor fatalities, large dollar amounts of hardware from ground and space operations; from fires and other controlable sources, and from ordinary operational activities such as motorized equipment operations. It is also apparent that most of the NASA employee injuries continue to occur from the ordinary and mundane activities associated with everyday life such as "slips and falls".

The recapitulation portion of the report is self explanatory to the extent that the information is offered as an indication of extremes in accidental occurrences. It points up the need for greater attention to safety at all levels of activity and operation in order to obviate such major mishaps.

In light of the contents of the report it is apparent that progress has been, and is being, made to reduce mishaps to a minimum consistent with the work being performed. It is just as apparent that a continuous and sustained effort is needed at all levels of activity in order to maintain the present low rates and figures, and a greater effort is (and will be) needed to reduce the present rates. This can be accomplished only through a willingness and conscious effort of all personnel at all levels of operation and can be promoted by the safety activities at all field installations. The "training" aspect of accident prevention should not be slighted in favor of directives, requirements, inspections, reviews, audits and surveys. The awareness of the individual must be the prime ingredient in preventing accidents. This awareness can only be achieved by safety promotion and training, or, sadly, from personal experience.

Prepared by the NASA Safety Office
Washington D. C. 20546
GMN/BLF